



CALL FOR PAPERS

Abstract Deadline: November 2, 2009

REMINDER:

In fairness to all potential authors,
late abstracts will not be accepted.

www.mrs.org/spring2010

MRS Symposium W: Diagnostics and Characterization of Energy Materials with Synchrotron and Neutron Radiation

Several fields in materials science have significantly benefited from advancements in synchrotron and neutron instrumentation. Prominent examples are catalysis, lithium ion batteries, and fuel cells, to name a few.

Materials for the energy sector come in a broad range of chemical and structural complexity, rendering their analysis and diagnostics difficult. Yet, a large number of critical issues relevant for energy purposes can be addressed with x-ray and neutron scattering and spectroscopy, such as chemical speciation of inhomogeneities on the mesoscale, characterization of the topology of porous media, such as electrodes and their degradation, and determination of diffusivities of ions in electrolytes. Even devices in operation can be probed and assessed with these techniques. To some extent, neutron and x-ray scattering and spectroscopy are complementary methods.

This symposium provides the platform for materials researchers working on energy conversion and storage materials and devices, and researchers who study such systems at large-scale facilities.

Topics of interest include:

- Porous materials and characterization of pore space
- Electrochemical systems and solid-liquid interface
- High-temperature materials
- Probing-light elements like H, Li, C
- Ultrafast phenomena
- Water splitting and photosynthesis
- H₂ storage materials
- Soft-x-ray spectroscopy and electronic structure
- Nanocluster catalysis: preparation, *in situ* characterization, and theory

Invited speakers include:

Andrew J. Allen (National Inst. of Standards and Technology), **Elton J. Cairns** (Univ. of California-Berkeley), **Stephen Cramer** (Univ. of California-Davis), **Bill David** (ISIS, United Kingdom), **Clemens Heske** (Univ. of Nevada-Las Vegas), **Adam Hitchcock** (McMaster Univ., Canada), **Alan J. Hurd** (LANSCE-Los Alamos), **Eberhard Lehmann** and **Joel Mesot** (Paul Scherrer Inst., Switzerland), **Pedro Montano** (DOE Ofc. of Basic Energy Sciences), **Henning F. Poulsen** (Risø DTU, Denmark), **Robert Robinson** (Bragg Inst., ANSTO, Australia), **Miquel Salmeron** (Lawrence Berkeley National Lab), **Stefan Vajda** (Argonne National Lab and Yale Univ.), **Bert M. Weckhuysen** (Utrecht Univ., The Netherlands), and **Shu Yamaguchi** (Univ. of Tokyo, Japan).

Symposium Organizers

Artur Braun

Empa – Swiss Federal Laboratories for Materials Testing and Research, Überlandstr. 129, CH-8600 Dübendorf, Switzerland
Tel 41-44-823-4850, Fax 41-44-823-4150, artur.braun@empa.ch

Jinghua Guo

Lawrence Berkeley National Laboratory, Advanced Light Source, One Cyclotron Rd., Berkeley, CA 94720
Tel 510-495-2230, Fax 510-495-2067, jguo@lbl.gov

Randall E. Winans

Argonne National Laboratory, Advanced Photon Source, 9700 S. Cass Ave., Argonne, IL 60439
Tel 630-252-7479, Fax 630-252-0365, rewinans@anl.gov

Helmut Schober

Institut Max von Laue - Paul Langevin (ILL), BP 156, 6 rue Jules Horowitz, F-38042 Grenoble, Cedex 9, France
Tel 33-4-76-207206 Fax +33-4-764839-06, schober@ill.fr